

REMARKS/ARGUMENTS

Favorable consideration of the present application is respectfully solicited.

The present application has been allowed except for the correction of certain formal matters. In response to the objection to the specification, typographical errors in paragraphs 10, 27 and 35 have been corrected. Additionally, the Abstract has been amended as suggested in the Office Action.

Concerning the use of the term “2t” to express a vehicle weight in paragraphs [0012], [0020], [0021] and [0030], and in Claim 6, it is noted that “t” is a standard abbreviation for a metric ton, also known as a “tonne.” See the attached definition taken from the on-line *“Dictionary of Units of Measurement,”* © Russ Rowlett and the University of North Carolina at Chapel Hill. Those skilled in the art would recognize that “t” here represents a metric ton, and not some other unit, because “2t” represents a unit of weight expressed in a specification which otherwise uses metric measurements (e.g., kW). Nonetheless, for clarity paragraph [0012] has been amended to expressly state that “t” refers to “metric tons.” The specification and claims otherwise remain unchanged.

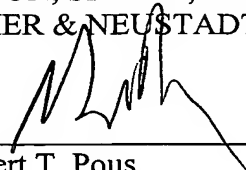
Concerning the “cost” line “C” in Fig. 2, this refers to the manufacturing cost of the fuel cell and capacitor. See paragraphs [0011] and [0019]. Since the line “C” is an equal cost line, it would be evident to one skilled in the art that this represents a line where the manufacturing cost remains the same as the capacitor and fuel cell output capabilities are varied. Thus, if the fuel cell maximum output increases, the maximum capacitance must decrease. Otherwise the overall manufacturing cost would increase due to the increased manufacturing cost of the larger output fuel cell. Accordingly it is respectfully submitted that this would be understood by those skilled in the art, and so the specification and drawings have not been amended in response to this objection.

Application No. 10/775,213  
Reply to Office Action of August 9, 2005

Applicants therefore believe that the present application is in a condition for allowance and respectfully solicit an early Notice of Allowability.

Respectfully submitted,

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pounds. This unit is sometimes called the **metric slug** in English, since the slug is defined in a similar way in the English system.

**to**

a traditional Japanese unit of volume. The to equals 10 sho, which is about 18.039 liters, 3.968 British imperial gallons, or 4.765 U.S. liquid gallons.

**tod**

a traditional unit of weight equal to 2 stone or 1 quarter. The tod is thus equivalent to 28 pounds or about 12.7 kilograms. "Tod" is an old German word meaning a load.

**toe**

a symbol for **tonne of oil equivalent**, a unit of energy used in the international energy industry. 1 toe represents the energy available from burning one tonne (metric ton) of oil; this is defined to be exactly 107 kilocalories, equivalent to approximately 7.4 barrels of oil, 1270 cubic meters of natural gas, or 1.4 tonnes of coal. 1 toe is also equivalent to 41.868 gigajoules (GJ), 39.683 million Btu (MM Btu) or dekatherms, or 11.630 megawatt hours (MWh).

**tog**

a metric unit used to describe the insulating properties of cloth. If the flow of heat through the cloth is 1 watt per square meter, then the insulating value in togs is 10 times the temperature difference, in Celsius degrees (or kelvins), between the two sides of the cloth. This makes the tog equal to exactly 0.1 m<sup>2</sup>K/W or about 0.645 clo. "Togs," now a slang word in English, is derived from an old Dutch/North German word *tuig* or *tög* meaning "the clothes you're wearing."

**toise**

a traditional French unit of distance comparable to the British fathom. Like the fathom, the toise originally represented the distance between the fingertips of a man with outstretched arms. Introduced by Charlemagne in 790, the toise is such an ancient unit that *toiser* has become a verb meaning "to measure" or "to size up." The toise equals six *pieds* (French feet). Feet of different lengths were used in France, but based on the 18th century Paris *pied* the toise equals 6.395 (English) feet or 1.949 meters. This unit was widely used in the 19th century and hasn't died out entirely today.

**tola**

a traditional unit of weight in India and South Asia. Like the seer and the maund, the tola varied considerably from one area to another. The official size in British India was 180 grains, which is about 0.4114 ounce (avoirdupois) or 11.664 grams. There are 80 tolas in a seer, 3200 in a maund.

**tolerance unit**

a unit of relative distance used by engineers when they put round pegs in round holes. Whenever a shaft passes through a hole, a small distance (the tolerance) must be left so that the shaft will be able to turn. If the diameter of a shaft is D millimeters, one tolerance unit for that shaft is 0.001D + 0.45(cube root of D). The cube root term allows proportionately more tolerance for smaller shafts. The actual tolerance can then be stated as a multiple of the tolerance unit.

**toman**

a historic unit of quantity equal to 10 000. The word is of ancient Persian origin; it survives in several languages of western Asia and is used today in Turkey and Iran.

**ton (tn or T or t) [1]**

a traditional unit of weight equal to 20 hundredweight. In the United States and Canada, there are 100 pounds in the hundredweight and exactly 2000 pounds (907.185 kilograms) in the ton. In Britain, there are 112 pounds in the hundredweight and 2240 pounds (1016.047 kilograms) in the ton. To distinguish between the two units, the British ton is called the **long ton** and the American one is the **short ton**. In old England, a "tun" was a large cask used to store wine. Because these tuns were of standard size, more or less, the tun came to represent both a volume unit, indicating the capacity of a cask, and also a weight unit, indicating the weight of a cask when it was full. The best symbol to use for this unit is **tn**. In the U.S. mining industry, **T** is used to distinguish the traditional ton from the metric ton, but **T** is the SI symbol for the tesla. The symbol **t**, traditionally

used for the long or short ton, is now reserved for the metric ton.

#### ton (t) [2]

a metric unit of mass, equal to 1000 kilograms, or approximately 2204.623 pounds avoirdupois. This **metric ton** is a bit smaller than the British long ton. The metric ton is now known officially as the **tonne** (see below).

#### ton (RT or rT) [3]

a unit used traditionally to measure the cargo capacity of a merchant ship. During the Middle Ages, merchant ships were rated by the number of tuns of wine they could carry. Today the merchant marine ton is defined to be exactly 100 cubic feet, or approximately 2.8316 cubic meters. This unit is often called the **register ton**, since it is recorded in official registers of ships. The symbol **RT** seems to be in wide use for this unit, but it is also used for the refrigeration ton (definition [7] below).

#### ton (DT or dT) [4]

a unit of volume used traditionally to measure the "displacement" of ships, especially warships. One way to describe the size of a ship is to state the volume of sea water it displaces when it is afloat: in other words, the volume of that part of the ship below the waterline. The actual weight of sea water varies somewhat according to its temperature and how salty it is, but for this purpose it has been agreed that a long ton of sea water occupies about 35 cubic feet. Accordingly the **displacement ton** is defined to be exactly 35 cubic feet, or approximately 0.9911 cubic meter. Since this is a much smaller unit than the register ton, warships have a much higher "tonnage" than merchant ships of approximately the same dimensions. The symbol **DT** is recommended for this unit.

#### ton (FT) [5]

a traditional unit of volume used for measuring the cargo of a ship, truck, train, or other freight carrier. This **freight ton** is exactly 40 cubic feet, or approximately 1.1326 cubic meters. However, the term "freight ton" is also being used to mean a metric ton of freight, volume not specified. Perhaps because of this confusion, the 40 cubic foot unit is often called the **measurement ton (MTON)**. But the confusion seems impossible to dispel; some shippers are now using "measurement ton" to mean a metric ton of freight. To further complicate the situation, the freight ton is also called the **U.S. shipping ton**; the **British shipping ton** is 5% larger at 42 cubic feet (1.1893 cubic meters).

#### ton (tn or T) [6]

a unit of energy used for measuring the energy of an explosion, especially a nuclear explosion. In this usage, one ton is supposed to be the amount of energy released by the explosion of one short ton of TNT. This is defined in the U.S. to equal exactly 4.184 gigajoules (GJ) or roughly 4 million Btu.

#### ton (RT) [7]

a unit of power used in refrigeration engineering. One ton of refrigeration is intended to be the power required to freeze one short ton of water at 0°C in 24 hours. This is assumed to be exactly 12 000 Btu per hour (Btu/h or "Btuh"), which is equivalent to 200 Btu/min, 3.516 853 kilowatts, 4.7162 horsepower, or 0.8396 (kilogram) Calorie per second (Cal/s). The symbol **RT** seems to be in wide use for this unit, but it is also used for the register ton (definition [3] above).

#### ton [8]

British slang for 100, especially the sum of 100 pounds, a speed of 100 miles per hour, or a score of 100 in darts or cricket. The origin of this usage is not clear.

#### tønde

the Danish word for "barrel," traditionally used as a unit of volume equal to 144 pots or about 139 liters. The tønde holds 30.6 British imperial gallons, making it comparable to the barrel. Similarly, one of the meanings of the German word *Tonne* is "barrel."

#### tønde land

a traditional Danish unit of land area, originally the area that could be planted with a tønde of

seed. The tønne land equals 14 000 square alen, which is about 5516 square meters, 0.5516 hectare, or 1.363 acre.

**tone**

another name for the step [2] as a musical unit describing the ratio in frequency between notes.

**tonelada**

a traditional weight unit of Spain and Portugal corresponding to the English and metric ton. The traditional Spanish tonelada equals 2000 libras or about 2028 pounds (919.9 kilograms). The Portuguese tonelada, however, equals 1728 Portuguese libras or arratels; this is about 1748.6 pounds or 793.15 kilograms.

**tonne (t)**

a metric unit of mass equal to 1000 kilograms or approximately 2204.623 pounds avoirdupois. The SI uses this French spelling for the metric ton (see ton [2] above) to distinguish it clearly from the long and short tons of customary English usage. Large masses are often stated as multiples of the tonne, although technically the SI requires that masses be stated as multiples of the gram. Thus a mass of  $10^3$  tonnes =  $10^6$  kg =  $10^9$  g is often called 1 kilotonne (kt) instead of 1 gigagram. In the United States, the Department of Commerce recommends that the tonne be called the **metric ton**.

**tonneau**

the traditional French ton, equal to 2000 livres or about 979 kilograms (1.079 U.S. ton). The tonneau was also used as a measure of volume equal to 42 cubic pieds (50.84 cubic feet, or about 1440 liters). In the wine trade, the tonneau was a shipment of 100 cases, or 1200 bottles (about 900 liters of wine).

**ton of force (tnf or tn)**

a traditional unit of force, equal to 2000 pounds of force (about 8.8964 kilonewtons) in the U.S. and 2240 pounds of force (about 9.9640 kilonewtons) in Britain.

**ton per square inch (tnf/in<sup>2</sup> or tsi)**

a unit of pressure traditionally used in engineering. In the U.S., 1 tsi = 2000 pounds per square inch or about 13.790 megapascals (MPa). In Britain, 1 tsi = 2240 pounds per square inch or about 15.444 megapascals.

**Torino number**

an arbitrary scale adopted in 1999 to express the likelihood that an asteroid or comet might collide with the Earth causing damage. Named for Torino (Turin), Italy, site of a June 1999 conference on near-Earth objects, the scale is intended to convey accurately the appropriate level of concern caused by newly-discovered objects, thus discouraging sensational press reports. The scale ranges from 0 (object certain to miss the Earth or too small to cause significant damage) to 10 (object certain to hit the Earth and large enough to cause catastrophic damage and global climate disruption). An official description of the scale is included. See also Palermo scale.

**torr (Torr)**

a non-metric unit of pressure equal to exactly 1/760 atmosphere, about 1.333 22 millibars, 133.322 pascals, or 0.019 337 pound per square inch (psi). The pressure of 1 atmosphere is almost exactly equivalent to the pressure of a column of 760 millimeters of mercury in a mercury barometer. As a result, 1 torr is the same thing as 1 mmHg within 1 part per million. In engineering, the pressures of near-vacuums are often stated in torr. The unit is named for Evangelista Torricelli (1608-1647), the Italian scientist who invented the barometer.

**tot**

a unit of volume for liquor. Generally the term is used informally, with no fixed definition. However, in British pubs the usual understanding is that a tot is 1/6 gill; this is equivalent to 5/6 Imperial fluid ounce or about 23.7 milliliters.

**tour**

another name for a shift in the oil industry. The unit is pronounced "tower." A tour, like a shift, is usually 8 hours in length.

**tovar**